**Montana Fish, Wildlife & Parks**

September 9, 1999

1420 East 6th Ave.
P.O. Box 200701
Helena, MT 59620-0701

Environmental Quality Council
Montana Department of Environmental Quality
Montana Department of Fish, Wildlife and Parks
- Fisheries Division
- Endangered Species Coordinator
- Nongame Coordinator
- Bozeman Office

Montana State Library, Helena
MT Environmental Information Center
Montana Audubon Council
Park County Conservation District
U.S. Army Corp of Engineers, Helena
U.S. Fish and Wildlife Service, Helena
State Historic Preservation Office, Helena
Upper Shields River Watershed Association, 5242 Highway 89 South, Livingston, MT 59047
Mr. Mike Easton, 451 Shields River Road, Wilsall, MT 59806

Ladies and Gentlemen:

Please find enclosed an Environmental Assessment prepared for a Future Fisheries Project tentatively planned to stabilize a 1,830 foot reach of the Shields River. This proposed project is located approximately 7 miles north of the town of Wilsall in Park County.

Please submit any comments that you have by 5 P.M., October 12, 1999 to the Department of Fish, Wildlife and Parks in Helena at the address listed above. Completion of this project is contingent upon approval being granted by the Fish, Wildlife and Parks Commission. If you have any questions, feel free to contact me at (406) 444-2432.

Sincerely,

Mark Lere, Program Officer
Habitat Protection Bureau
Fisheries Division

ENVIRONMENTAL ASSESSMENT
Fisheries Division
Montana Fish, Wildlife and Parks
Shields River Bank Stabilization Project

General Purpose: The 1995 Montana Legislature enacted statute 87-1-272 through 273 which directs the Department to administer a Future Fisheries Improvement Program. The program involves physical projects to restore degraded fish habitat in rivers and lakes for the purpose of improving wild fisheries. The legislature established an earmarked funding account to help accomplish this goal. This project is being proposed to stabilize a 1,830 foot reach of the Shields River using bank shaping, rootwad revetment, rock vanes, vortex rock weirs and revegetation. This portion of the Shields River contains brown trout, Yellowstone cutthroat trout and mountain whitefish. The project site, involving four property owners, is located approximately 7 miles north of the town of Wilsall in Park County (Attachment 1).

I. Location of Project: This project will be conducted on the Shields River located approximately 7 miles north of the town of Wilsall within Township 4 North, Range 9 East, Section 21 in Park County.

II. Need for the Project: Department Goal C indicates that a Fisheries Division objective is to "provide and support programs to conserve and enhance high quality aquatic habitat and protect native aquatic species." The Future Fisheries Improvement Program is a tool to help achieve that objective.

This portion of the Shields River has become unstable due to past manipulations of the channel and poor bank stabilization practices associated with diversion structures. This past activity has resulted in accelerated bank erosion, channel degradation, a potential channel avulsion and meander cut-off, and poor fish habitat. The channel avulsion, if allowed to proceed, would reduce the channel length by approximately 900 feet. The loss in channel length, in conjunction with an over-steepened slope, would result in accelerated channel instability. This project proposes to stabilize a 1,830 foot reach of stream channel by adjusting channel morphology, installing bank revetment and grade controls, and planting willow and other native shrubs within the riparian corridor.

III. Scope of the Project:

The proposal calls for stabilizing approximately 1,830 feet of stream channel on six respective sites. On site 1, the proposal calls for stabilizing the right bank utilizing a rock toe (2-3' ID rock), rootwad revetment, erosion control fabric, sod mats and woody vegetation. Site 2 calls for filling the meander cut-off and protecting the right bank with rootwad revetment, sod and erosion matting and removing a mid-channel bar. The cut-bank at site 3 would be stabilized by reconstructing the channel to an appropriate width to depth ratio and installing four rock vanes, rootwad revetment and a vortex rock weir for grade control. Site 4 calls for repairing an existing irrigation weir and installing a second weir about 30 feet downstream. A rock sill would be

installed in a side channel at site 5 to block all flows below bankfull stage. In addition, a vortex rock weir would be constructed as a grade control and eroding banks would be stabilized by sloping and by the placement of sod and erosion control fabric. Site 6 calls for restoring an existing ditch by installing a new headgate structure, filling in the old diversion channel and stabilizing adjacent stream banks. This proposed project is expected to cost $35,028.00. Of this total, the Future Fisheries Improvement Program would be contributing up to $7,000.00.

IV. Environmental Impact Checklist:

Please see attached checklist.

V. Explanation of Impacts to the Physical Environment

1. Terrestrial and aquatic life and habitats.

Stabilizing the existing channel and preventing a potential meander cut-off is expected to create a more healthy habitat for aquatic life by maintaining channel length and reducing sediment input. Expected improvements in the aquatic habitat should enhance resident trout populations in the Shields River. Habitat for riparian dependent wildlife would also be improved by enhancing the riparian vegetative community through the planting of willow and other native shrubs along the stream margin.

2. Water quantity, quality and distribution.

Short term increases in turbidity will occur during project construction. To minimize turbidity, construction will occur during a low flow period and operation of equipment in the stream channel will be minimized to the extent practicable. The Department of Environmental Quality will be contacted to determine narrative conditions required to meet short-term water quality standards and protect aquatic biota. A 310 permit will be obtained from the local Conservation District. In the long term, stabilizing the existing channel would reduce sediment contribution to downstream areas, thereby improving the overall quality of downstream waters. Two existing headgates on this reach of stream have required substantial maintenance in the past. This past maintenance has de-stabilized the river. The proposed project would provide irrigators the ability to receive their water and, at the same time, reduce the need for maintenance.

3. Geology and soil quality, stability and moisture.

Soils along the stream margin would be disturbed by sloping back cut-banks and by the installation of root wads and rock vanes, but would recover quickly following proposed re-vegetation efforts. Overall, the project is expected to reduce bank erosion and improve channel stability.

4. Vegetation cover, quantity and quality.

Riparian vegetation and cover would be improved by creating a more stable stream channel and by planting willow and other native shrubs along the stream corridor.

5. Aesthetics.

The placement of rock vanes and vortex rock weirs may not be aesthetically pleasing. However, aesthetics would be enhanced overall by restoring an unstable reach of stream to a more healthy and natural stream environment. Approximately 1,830 feet of stream channel would be stabilized through construction of proper channel dimensions, the installation of root wads or rock vanes on eroding meander bends and the placement of vortex rock weirs. The riparian vegetative community would be enhanced by planting willow and other native shrubs along the margins of the channel.

7. Unique, endangered, fragile, or limited environmental resources

This portion of the Shields River supports native Yellowstone cutthroat trout. The Yellowstone cutthroat trout has recently been petitioned for listing under the Endangered Species Act. The proposed project is expected to improve the aquatic habitat in the river and, as a result, enhance the Yellowstone cutthroat trout population.

9. Historic and archaeological sites

The proposed project will likely require an individual Army Corp of Engineers 404 permit. Therefore, the State Historic Preservation Office has been contacted to determine the need for compliance with the federal historic preservation regulations. The project will not begin until a cultural clearance is granted.

VI. Explanation of Impacts on the Human Environment.

4. Agricultural or industrial production.

The proposed project is, in part, intended to improve the headings on two irrigation diversions. As a result, irrigators would be able to divert their allotment of water with less maintenance of the diversion structures.

7. Access to & quality of recreational activities.

It is anticipated that the stabilization of 1,830 feet of the Shields River would improve overall aquatic habitat and, as a result, would enhance trout populations residing in the stream. Consequently, the recreational fishery in the Shields River would be expected to be improved. Fishing access is provided to the public by permission from the landowner.

VII. Discussion and Evaluation of Reasonable Alternatives.

1. No Action Alternative

If no action is taken, this reach of the Shields River will remain unstable. This ongoing instability will result in continued bank erosion, excessive sediment loading and the loss of fish habitat. If the potential for a stream capture of Cole Creek and an adjacent meander cut-off are allowed to proceed, the channel could be reduced in length by about 1,000 feet. This loss of channel length, in conjunction with an over-steepened slope, would result in accelerated channel instability. Recreational opportunities associated with fish and wildlife resources will remain reduced and aesthetics will continue to be impaired.

2. The Proposed Alternative

The proposed alternative is designed to stabilize the stream channel at 6 sites within a 1,830 foot reach of the Shields River. Proposed techniques include rootwad revetment, bank shaping, rock vanes, vortex rock weirs and revegetation. These activities would reduce the probability of the Shields River capturing a portion of Cole Creek and the probability of a meander cut-off. These activities also would reduce sediment loading, resulting in a more healthy habitat for aquatic life. Planting native shrubs along the stream margin would create more diverse habitat for riparian dependent wildlife. This alternative would improve fish and wildlife habitat and water quality within the project area and would be expected to increase trout populations in the Shields River.

VIII. Environmental Assessment Conclusion Section

1. Is an EIS required? No.

We conclude from this review that the proposed activities will have a positive impact on the physical and human environment.

2. Level of public involvement.

The proposed project was reviewed and supported by the public review panel of the Future Fisheries Improvement Program. The proposed project also will be reviewed by the Fish, Wildlife and Parks Commission and will be contingent upon their approval. The Environmental Assessment (EA) is being distributed to all individuals and groups listed on the cover letter. The EA will be published on the Montana Electronic Bulletin Board.

3. Duration of comment period?

Public comment will be accepted through 5 P.M. on October 12, 1999.

4. Person responsible for preparing the EA.

Mark Lere, Program Officer
Habitat Protection Bureau
Fisheries Division
Montana Department of Fish, Wildlife and Parks
1420 East 6th Avenue
Helena, MT 59620

Telephone: (406) 444-2432

**MONTANA DEPARTMENT OF FISH, WILDLIFE AND PARKS**
1420 E 6th Ave, PO BOX 200701, Helena, MT 59620-0701
(406) 444-2535

# ENVIRONMENTAL ASSESSMENT

Project Title Shields River Bank Stabilization Project

Division/Bureau Fisheries Division -Future Fisheries Improvement

Description of Project The project is being proposed to stabilize a 1,830 foot reach of the Shields River using bank shaping, rootwad revetment, rock vanes, vortex rock weirs and revegetation. The Shields River supports rainbow trout, brown trout and Yellowstone cutthroat trout. The project site, involving four landowners, is located approximately 7 miles north of the town of Wilsall in Park County.

POTENTIAL IMPACT ON PHYSICAL ENVIRONMENT

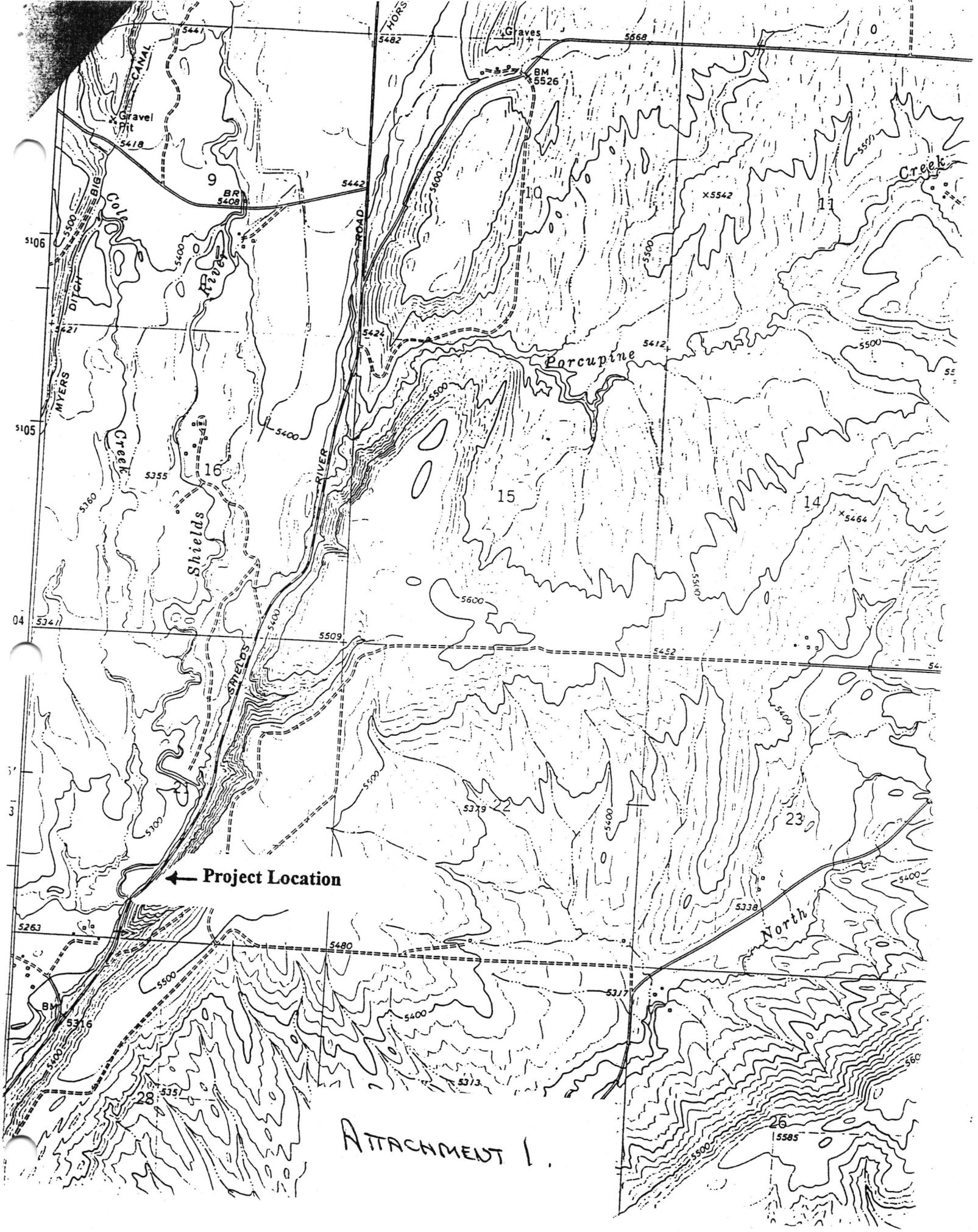
| | MAJOR | MODERATE | MINOR | NONE | UNKNOWN | COMMENTS ON ATTACHED PAGES |
|---|---|---|---|---|---|---|
| 1. Terrestrial & aquatic life and habitats | | | X | | | X |
| 2. Water quality, quantity & distribution | | | X | | | X |
| 3. Geology & soil quality, stability & moisture | | | X | | | X |
| 4. Vegetation cover, quantity & quality | | | X | | | X |
| 5. Aesthetics | | | X | | | X |
| 6. Air quality | | | | X | | |
| 7. Unique, endangered, fragile, or limited environmental resources | | | X | | | X |
| 8. Demands on environmental resources of land, water, air & energy | | | | X | | |
| 9. Historical & archaeological sites | | | | X | | X |

POTENTIAL IMPACTS ON THE HUMAN ENVIRONMENT

| | MAJOR | MODERATE | MINOR | NONE | UNKNOWN | COMMENTS ON ATTACHED PAGES |
|---|---|---|---|---|---|---|
| 1. Social structures & mores | | | | X | | |
| 2. Cultural uniqueness & diversity | | | | X | | |
| 3. Local & state tax base & tax revenue | | | | X | | |
| 4. Agricultural or industrial production | | | X | | | X |
| 5. Human health | | | | X | | |
| 6. Quantity & distribution of community & personal income | | | | X | | |
| 7. Access to & quality of recreational and wilderness activities | | | X | | | X |
| 8. Quantity & distribution of employment | | | | X | | |
| 9. Distribution & density of population & housing | | | | X | | |
| 10. Demands for government services | | | | X | | |
| 11. Industrial & commercial activity | | | | X | | |
| 12. Demands for energy | | | | X | | |
| 13. Locally adopted environmental plans & goals | | | | X | | |
| 14. Transportation networks & traffic flows | | | | X | | |

Other groups or agencies contacted or which may have overlapping jurisdiction Park County Conservation District, NRCS, US Fish and Wildlife Service, US Army Corp of Engineers, Montana Department of

Environmental Quality, State Historic Preservation Office
Individuals or groups contributing to this EA Park County Conservation District; Hydrotech, Water Resource Consultants
Recommendation concerning preparation of EIS No EIS required.
EA prepared by : Mark Lere
Date: August 23, 1999




ATTACHMENT 1.